

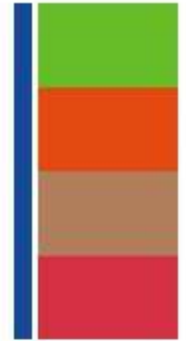
Advancing Practices for Sustainable Infrastructure



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Booz Allen Hamilton

Ecobuild America
Washington, DC
December 8, 2010

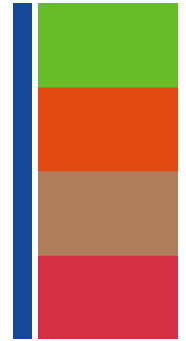
American Society of Civil Engineers



- Established in 1852 – New York City
- Roots in Technical Issues / Exchange
- Current Membership – 140,000
 - 75 Sections / 270 Student Chapters
- Outside the USA:
 - 14,000 members / 31 Sections & Groups
 - 72 Agreements of Cooperation
- Current Focus is Much Broader:
 - Technical (8 Specialty Institutes)
 - Education (Undergraduate, Graduate, Post-licensure)
 - Public Policy
 - Outreach



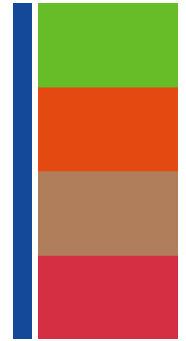
Sustainable Infrastructure – a short definition



Sustainable civil infrastructure provides **environmental**, **economic** and **social** (Triple Bottom Line) well-being, now and for the future



Elements of Sustainable Infrastructure



■ Environmental Issues

- Reduced use of potable water / use of recycled water
- Reduced construction waste / landfill use / material reuse
- Use of renewable energy sources
- Design for disassembly, recycling, and reuse

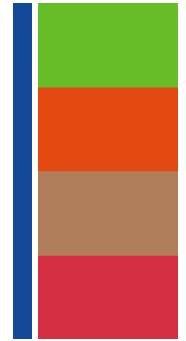
■ Economic Issues

- Life-cycle costs & benefits
- Planning & budgeting for long-term maintenance / operation
- Propagating growth and economic development

■ Social Issues

- Improving access for communities
- Protection & enhancement of cultural & heritage features
- Social equity
- Improved public transportation availability

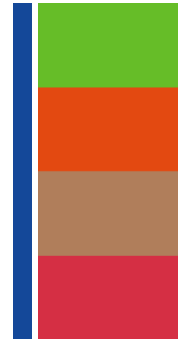
ASCE's Sustainability Efforts



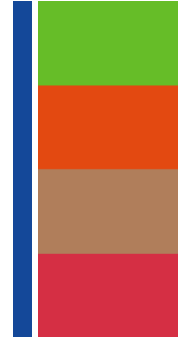
- Develop a weighted matrix U.S. **rating system for civil engineering infrastructure** projects similar to CEEQUAL (www.ceequal.co.uk)
 - Include “transformational” considerations of FIDIC Sustainable Project Management program (www.fidic.org) and Triple Bottom Line
- Include a web-based tool for interactive decision-support
- Develop a complementary sustainability certificate course for civil infrastructure

Deployment of the Institute for Sustainable Infrastructure

- Rating system core framework is completed
 - Pilot projects initiated
 - Modifications to system before full roll-out
- Collaborative organization to be established with ASCE, APWA & ACEC
- Core Products and Programs
 - Rating system, including software application
 - Education and training
 - Professional (individual) certification
 - Project certification at various levels of performance



Rating system elements



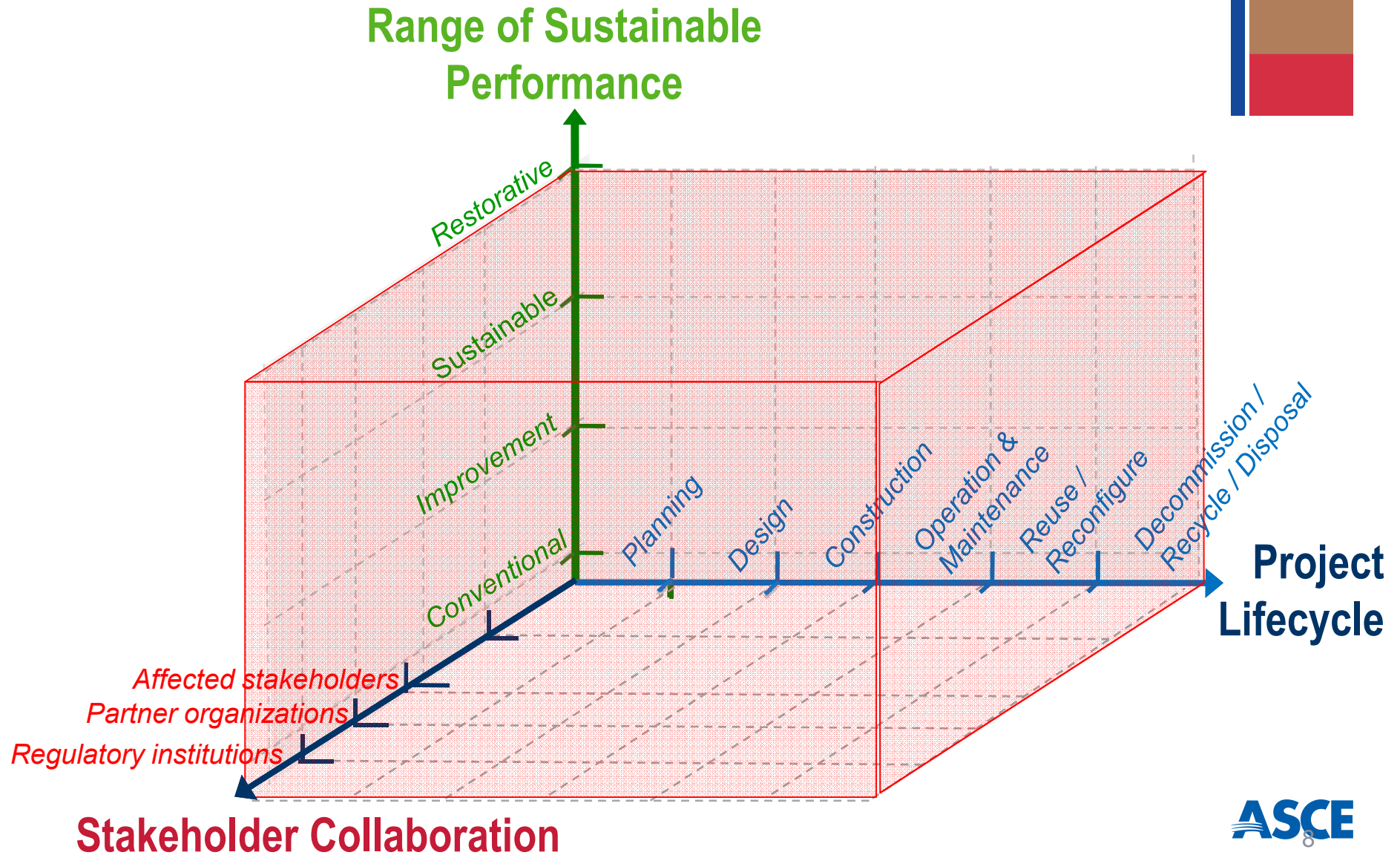
- Three Component Modules:
 - Best management practices & guidance standards
 - Rating system
 - Decision Support Systems

- **Pathway Contribution** (Doing the Right Things):
Community as Common Denominator
 - Relevance to overall community goals and aspirations
 - Improving lives, achieving aspirations
 - Avoiding costly traps, vulnerabilities
 - Propagating growth and development
 - Minimizing adverse impacts

- **Performance Contribution** (Doing Things Right)



Proposed Approach



Rating System Triple Bottom Line



Economic

- Project Contribution and Setup ↓
- Project Management
- Land Use ↓
- Energy & Carbon ↓
- Resource Management
- Transport ↓

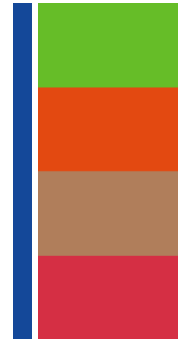
Social

- Project Contribution and Setup ↓
- Project Management
- Neighbors and communities ↓
- Community & Stakeholder ↓
- Historic Environment ↓
- Transport ↓

Environment

- Project Contribution and Setup ↓
- Project Management
- Land Use ↓
- Landscape ↓
- Resource Management ↓
- Energy & Carbon ↓
- Ecology & Biodiversity ↓
- Water Resources ↓
- Transport ↓

Rating System Primary Criteria



	Section	Weight (%)
1	Pathway	12.6
2	Project Strategy & Management	10.6
3	Community: Long & Short Term Effects	10.7
4	Land Use & Restoration	8.9
5	Landscapes	7.0
6	Ecology & Biodiversity	8.8
7	Water Resources & Environment	11.5
8	Energy & Carbon	11.7
9	Resource Management Including Waste	8.2
10	Transportation	10.0
	TOTAL	100%